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EXAMINER

WOLLSCHLAGER, JEFFREY MICHAEL

ART UNIT	PAPER NUMBER
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1732

MAIL DATE	DELIVERY MODE
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08/09/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/511,014	Applicant(s) SEO ET AL.	
	Examiner Jeff Wollschlager	Art Unit 1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-18 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3,4 and 7-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Applicant's amendment to the claims filed April 16, 2007 has been entered. Claims 1 and 2 have been canceled. Claims 3 and 4 are currently amended. Claims 7-18 are new. Claims 5 and 6 remain withdrawn from further consideration.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 3, 4 and 7-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Regarding claim 3, there is insufficient support in the specification to support a limitation requiring "continuing to apply pressure to the composite mat while cooling the same". Regarding claim 7, there is insufficient support in the specification to support the broad limitation to "matrix fibers". The instant specification only provides support for thermoplastic matrix fibers. Further, regarding claim 7, the limitation "compressing while cooling the composite mat" is not supported by the original disclosure. As to claim 14, the specification does not provide support for "or more" in regards to inorganic reinforcing fibers.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 14, a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language.

The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

In the present instance, claim 14 recites the broad recitation "or more", and the claim also recites "20-40 vol%" which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 3, 4, 7, 10 and 12-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Bastioli et al. (U.S. Patent 5,145,626; issued September 8, 1992).

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Regarding claims 3 and 7, Bastioli et al. teach a method of manufacturing a fiber-reinforced composite comprising: fibrillating and combining thermoplastic fiber and reinforcing fiber to form combined fibers; dispersing and volatilizing the combined fibers to form a composite mat; and needle-punching the composite mat (Abstract; col. 1, line 59-col. 2, line 57; col. 3, lines 40-65; col. 4, lines 27-30; Figure 1, elements (3), (4), (5), (6)). Bastioli et al. teach heating the material after needle punching and cooling the mat to obtain a composite sheet (Figure 1, element (8) (9), (10), (13), (14)). Bastioli et al. teach reheating the composite sheet through a compressing zone (Figure 1, elements (9), (10), and (13)) and continuing to apply pressure while cooling (14).

As to claim 4, Bastioli et al. disclose forming the sheet on a continuous belt (Figure 1).

As to claim 10, when Bastioli et al. cool the product the mat intrinsically cools.

As to claim 12, Bastioli et al. employ the same claimed fibers and therefore their fibers intrinsically have the same claimed physical properties.

As to claims 13-16, Bastioli et al. disclose natural, artificial and synthetic fibers (Abstract; col. 3, lines 13-17) at a range from 10% to 60% (col. 3, lines 10-12) and disclose short fibers representing 5 to 30% by weight (col. 4, lines 7-12).

As to claims 17 and 18, Bastioli et al. disclose the fibers may be continuous or if cut have a length greater than 1 cm with a range of 5 to 25 cm preferred (col. 3, lines 18-27).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bastioli et al. (U.S. Patent 5,145,626), as applied to claims 3, 4, 7, 10 and 12-18 above, in view of Jaffe (US 5,772,846).

As to claim 8, Bastioli et al. teach the method set forth above. Bastioli et al. do not state they laminate their thermoformable sheet to form a final product. However, Jaffe disclose forming laminates from thermoformable sheets (Abstract; col. 2, lines 50-60).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have formed a laminate from the sheet produced by Bastioli et al., as suggested by Jaffe for the purpose of providing a desired product.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bastioli et al. (U.S. Patent 5,145,626), as applied to claims 3, 4, 7, 10 and 12-18 above, in view of Hauber (US 6,773,773).

As to claim 9, Bastioli et al. disclose preheating with infrared heaters not a belt. However, Hauber discloses it is known in the art to heat with infrared heaters or belts (col. 4, lines 31-60).

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Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed an art recognized equivalent alternative heating means, such as a heated belt, in the method disclosed by Bastioli et al. since it has been held that employing art recognized equivalents intended for the same purpose (e.g. heating) is *prima facie* obvious (MPEP 2144.06-2144.07).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bastioli et al. (U.S. Patent 5,145,626), as applied to claims 3, 4, 7, 10 and 12-18 above, in view of Koba et al. (US 5,445,701).

As to claim 11, Bastioli et al. teach the method set forth above, but do not specify the cooling mechanism. However, Koba et al. teach that cooling with air and water is known in the art (col. 5, lines 60-67).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have cooled the composite of Bastioli et al. with conventional means such as water and air as disclosed by Koba et al. due to their ready availability and art recognized suitability.

Response to Arguments

Applicant's arguments filed April 16, 2007 regarding the Davies et al. reference have been considered, but are moot in view of the amendment to the claims.

Applicant's arguments filed April 16, 2007 regarding Bastioli et al. have been fully considered, but they are not persuasive.

Applicant's arguments appear to be on the following grounds:

1. Bastioli et al. do not teach thermoplastic fibers.

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2. Bastioli et al. do not form a pseudo-foamed composite sheet.

The arguments are not persuasive for the following reason:

1. The examiner acknowledges that applicant's lexicography controls the meaning of the terms. The examiner notes that this holds true for prior art references as well. The instant specification provides no definition of the dimensional properties, aspect ratios, etc., of the thermoplastic fiber. The only mention of dimensions regarding fibers is provided for the reinforcing fibers and a range of 1 – 50 mm is given. Bastioli et al. define their "granules" as having dimensions ranging in diameter or height from 0.1 to 10 mm (col. 3, lines 58-64). The examiner further notes this discloses an aspect ratio up to 100. Accordingly, the examiner can only reasonably conclude that the "granules" of Bastioli et al. anticipate the claimed "fibers" under a broad reasonable interpretation of the claim.

2. Bastioli et al. employ the same claimed process steps with the same claimed materials in the same claimed manner. It follows that Bastioli et al. intrinsically realize the same claimed physical properties and effects.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

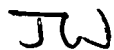
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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is 571-272-8937. The examiner can normally be reached on Monday - Thursday 7:00 - 4:45, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jeff Wollschlager
Examiner
Art Unit 1732

August 3, 2007



CHRISTINA JOHNSON
SUPERVISORY PATENT EXAMINER